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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/714,082	11/16/2000	Lewis T. Donzis	NORR0007US(12514RXUS02U)	5132

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EXAMINER	
LAZARO, DAVID R	
ART UNIT	**PAPER NUMBER**
2155	3

DATE MAILED: 03/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application N .	Applicant(s)	
	09/714,082	DONZIS ET AL.	
	Examiner	Art Unit	
	David Lazaro	2155	

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 November 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-31 are pending in this Office Action

Priority

2. This application claims the benefit of provisional application 60/201,443 filed 05/03/2000.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 01/16/02 has been considered by the examiner.

Claim Objections

4. Claim 8 is objected to because of the following informalities: In line 2, 'form' should be 'from'. Appropriate correction is required.

5. Claim 31 is objected to because of the following informalities: In lines 3 and 5, the gateways should be referenced in a consistent manner as either 'gateway' or 'security gateway'. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 6-8, 11-15, 18, 19, 21-23, 27, 28, 30 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,473,798 by Grosser, Jr. et al. (Grosser).

8. With respect to Claim 1, Grosser teaches a method of determining if a link is alive (Col. 1 lines 8-14), comprising: establishing a secure link (Col. 1 lines 33-55) between a first node (Col. 3 lines 22-33) and a second node (Col. 3 lines 46-49) according to a security protocol (Col. 4 lines 23-28); sending at least one ping message targeting the second node over the secure link (Col. 6 lines 34-60), the at least one ping message defined outside the security protocol (Col. 6 lines 53-60); and monitoring for at least one ping reply to determine if the secure link is alive (Col. 6 line 61 – Col. 7 line 8).

9. With respect to Claim 2, Grosser teaches all the limitations of Claim 1 and further teaches establishing the secure link comprises establishing a virtual private network session (Col. 1 lines 33-41).

10. With respect to Claim 3, Grosser teaches all the limitations of Claim 1 and further teaches establishing the secure link comprises establishing a link protected by an Internet Protocol Security protocol (Col. 4 lines 23-28).

11. With respect to Claim 6, Grosser teaches all the limitations of Claim 1 and further teaches establishing the secure link comprises establishing the secure link between first and second nodes each comprising a security gateway (Col. 3 lines 23-28 and lines 34-39).

12. With respect to Claim 7, Grosser teaches all the limitations of Claim 6 and further teaches sending at least one ping message targeting another node behind the second node (Col 6 lines 37-51).

13. With respect to Claim 8, Grosser teaches all the limitations of Claim 7 and further teaches monitoring for at least one ping reply from the other node (Col. 6 line 61 – Col. 7 line 8).

14. With respect to Claim 11, Grosser teaches a method of communicating with a remote node (Col. 1 lines 8-14 and Col. 3 lines 46-49), comprising: establishing a secure link (Col. 1 lines 33-55 and Col. 4 lines 23-28) between a first security gateway (Col. 3 lines 23-28) and a second security gateway (Col. 3 lines 34-39), the remote node in communication with the second security gateway; sending at least one ping message to the remote node over the secure link and through the second security gateway (Col. 6 lines 34-60); and monitoring for at least one ping reply from the remote node to determine if the secure link is alive (Col. 6 line 61 – Col. 7 line 8).

15. With respect to Claim 12, Grosser teaches all the limitations of Claim 11 and further teaches establishing a secure link comprises establishing a secure link protected by an Internet Protocol Security protocol (Col. 4 lines 23-28).

16. With respect to Claim 13, Grosser teaches all the limitations of Claim 11 and further teaches establishing the secure link comprises establishing a virtual private network session (Col. 1 lines 33-41).

17. With respect to Claim 14, Grosser teaches all the limitations of Claim 11 and further teaches establishing the secure link comprises establishing a secure link protected according to a security protocol (Col. 4 lines 23-28).

18. With respect to Claim 15, Grosser teaches all the limitations of Claim 14 and further teaches sending the at least one ping message comprises sending at least one ping message defined outside the security protocol (Col. 6 lines 53-60).

19. With respect to Claim 18, Grosser teaches a system for communicating (Col. 1 lines 8-14) between a network element and a remote node (Col. 3 lines 46-49), comprising: a security module adapted to establish a secure link with the remote node, the secure link (Col. 1 lines 33-55), having a security mechanism according to a security protocol (Col. 4 lines 23-28); and a keep-alive module adapted to send at least one ping message over the secure link to the remote node (Col. 6 lines 34-60), the at least one ping message defined outside the security protocol (Col. 6 lines 53-60).

20. With respect to Claim 19, Grosser teaches all the limitations of Claim 18 and further teaches the security protocol comprises an Internet Protocol Security Protocol (Col. 4 lines 23-28).

21. With respect to Claim 21, Grosser teaches all the limitations of Claim 18 and further teaches an interface to a packet-based network, the secure link established over the packet-based network; and a layer to control communications over the packet-based network (Col. 1 lines 16-42 and lines 43-48).

22. With respect to Claim 22, Grosser teaches all the limitations of Claim 21 and further teaches the layer comprises an Internet Protocol layer (Col. 1 lines 16-21).

23. With respect to Claim 23, Grosser teaches all the limitations of Claim 18 and further teaches the keep-alive module is adapted to further monitor for at least one ping reply responsive to the at least one ping message to determine if the secure link is alive (Col. 6 line 61 – Col. 7 line 8).

24. With respect to Claim 27, Grosser teaches an article comprising at least one storage medium containing instructions for controlling communications (Col. 7 lines 20-47), the instructions when executed causing a controller to: establish a secure link (Col. 1 lines 33-55) between a first node (Col. 3 lines 22-33) and a second node (Col. 3 lines 46-49) according to a security protocol (Col. 4 lines 23-28); send at least one ping message targeting the second node over the secure link (Col. 6 lines 34-60), the at least one ping message defined outside the security protocol (Col. 6 lines 53-60); and monitor for at least one ping reply to determine if the secure link is alive (Col. 6 line 61 – Col. 7 line 8).

25. With respect to Claim 28, Grosser teaches all the limitations of Claim 27 and further teaches the instructions when executed cause the controller to further establish an Internet Protocol security association for the secure link (Col. 4 lines 23-28).

26. With respect to Claim 30, Grosser teaches all the limitations of Claim 27 and further teaches the controller is part of the first node (Col. 5 lines 24-28).

27. With respect to Claim 31, Grosser teaches a data signal embodied in a carrier wave and containing instructions for controlling communications (Col. 7 lines 20-47), the instructions when executed causing a system to : establish a secure link (Col. 1 lines 33-55 and Col. 4 lines 23-28) between a first gateway (Col. 3 lines 23-28) and a second security gateway (Col. 3 lines 34-39), send at least one ping message to a remote node over the secure link and through the second security gateway (Col. 6 lines 34-60); and monitor for at least one ping reply from the remote node to determine if the secure link is alive (Col. 6 line 61 – Col. 7 line 8).

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

29. Claims 4, 5, 16, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grosser in view of U.S. Patent 6,182,226 by Reid et al. (Reid).

30. With respect to Claim 4, Grosser teaches all the limitations of Claim 3 but does not explicitly disclose sending a ping message comprising sending at least one Internet Control Message Protocol (ICMP) message. Reid teaches sending a ping message may comprise sending at least one ICMP message (Col. 15 lines 59-61). It would have

been obvious to one of ordinary skill in the art at the time the invention was made to take the method disclosed by Grosser and modify it as indicated by Reid such that sending the at least one ping message comprises sending at least one Internet Control Message Protocol message. One would be motivated to have this since it is a "commonly known" way to send a ping message and could therefore be more easily incorporated into existing systems (Col. 15 lines 59-61).

31. With respect to Claim 5, Grosser teaches all the limitations of Claim 1 but does not explicitly disclose sending a ping message comprising sending at least one Internet Control Message Protocol (ICMP) message. Reid teaches sending a ping message may comprise sending at least one ICMP message (Col. 15 lines 59-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the method disclosed by Grosser and modify it as indicated by Reid such that sending the at least one ping message comprises sending at least one Internet Control Message Protocol message. One would be motivated to have this since it is a "commonly known" way to send a ping message and could therefore be more easily incorporated into existing systems (Col. 15 lines 59-61).

32. With respect to Claim 16, Grosser teaches all the limitations of Claim 15 but does not explicitly disclose sending a ping message comprising sending at least one Internet Control Message Protocol (ICMP) message. Reid teaches sending a ping message may comprise sending at least one ICMP message (Col. 15 lines 59-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the method disclosed by Grosser and modify it as indicated by Reid such that

sending the at least one ping message comprises sending at least one Internet Control Message Protocol message. One would be motivated to have this since it is a "commonly known" way to send a ping message and could therefore be more easily incorporated into existing systems (Col. 15 lines 59-61).

33. With respect to Claim 17, Grosser in view of Reid teaches all the limitations of Claim 16 and further teaches establishing a secure link comprises establishing a secure link according to an Internet Protocol Security protocol (Col. 4 lines 23-28 of Grosser).

34. With respect to Claim 20, Grosser teaches all the limitations of Claim 18 but does not explicitly disclose the ping message comprising an Internet Control Message Protocol (ICMP) message. Reid teaches a ping message may comprise a ICMP message (Col. 15 lines 59-61). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system disclosed by Grosser and modify it as indicated by Reid such that the at least one ping message comprises an Internet Control Message Protocol message. One would be motivated to have this since it is a "commonly known" way to send a ping message and could therefore be more easily incorporated into existing systems (Col. 15 lines 59-61).

35. Claims 9, 10, 24, 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Grosser in view of U.S. Patent 6,636,898 by Ludovici et al. (Ludovici).

36. With respect to Claim 9, Grosser teaches all the limitations of Claim 1. Although Grosser teaches remedial action may occur to correct a link that is not alive (Col. 5 lines

9-12), Grosser does not explicitly disclose tearing down the secure link if it is determined to not be alive. Ludovici teaches that in a VPN using a secure link, such as those using IPSec protocol (Col. 1 lines 49-52), the link should be torn down when errors concerning the link are detected (Col. 1 line 57 – Col. 2 line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the method of Grosser and modify it as indicated by Ludovici such that the method further comprises tearing down the secure link if the secure link is determined not to be alive. One would be motivated to have this as it ensures the system is not compromised and enables more efficient management of connection lifetimes and security associations (Col. 1 line 57 – Col. 2 line 10).

37. With respect to Claim 10, Grosser in view of Ludovici teaches all the limitations of Claim 9 and further teaches tearing down the secure link comprises tearing down a security association according to an Internet Protocol Security protocol (Col. 1 lines 49-51 and Col. 5 lines 30-36 of Ludovici).

38. With respect to Claim 24, Grosser teaches all the limitations of Claim 23. Grosser teaches remedial action may occur to correct a link that is not alive (Col. 5 lines 9-12), but does not explicitly disclose the security module being adapted to tear down a security association of a secure link if it is not alive. Ludovici teaches that in a VPN using a secure link, such as those using IPSec protocol (Col. 1 lines 49-52), the link and its security associations (Col. 1 lines 49-51 and Col. 5 lines 30-36) should be torn down when errors concerning the link are detected (Col. 1 line 57 – Col. 2 line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made

to take the system of Grosser and modify it as indicated by Ludovici such that the security module is adapted to tear down a security association of the secure link if the secure link is not alive. One would be motivated to have this as it ensures the system is not compromised and enables more efficient management of connection lifetimes and security associations (Col. 1 line 57 – Col. 2 line 10).

39. With respect to Claim 25, Grosser in view of Ludovici teaches all the limitations of Claim 24 and further teaches the security association comprises an Internet Protocol Security protocol security association (Col. 1 lines 49-52 of Ludovici).

40. With respect to Claim 29, Grosser teaches all the limitations of Claim 28. Grosser teaches remedial action may occur to correct a link that is not alive (Col. 5 lines 9-12), but does not explicitly disclose tearing down the security association if the controller does not receive the at least one ping reply. Ludovici teaches that in a VPN using a secure link, such as those using IPSec protocol (Col. 1 lines 49-52), the link and its security associations (Col. 1 lines 49-51 and Col. 5 lines 30-36) should be torn down when errors concerning the link are detected (Col. 1 line 57 – Col. 2 line 10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system of Grosser and modify it as indicated by Ludovici such that the instructions when executed cause the controller to tear down the security association if the controller does not receive the at least one ping reply. One would be motivated to have this as it ensures the system is not compromised and enables more efficient management of connection lifetimes and security associations (Col. 1 line 57 – Col. 2 line 10).

41. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Grosser in view of U.S. Patent 6,173,411 by Hirst et al. (Hirst). Grosser teaches all the limitations of Claim 18 and further teaches the keep-alive module is adapted to further monitor for at least one ping reply responsive to the at least one ping message to determine if the secure link is alive (Col. 6 line 61 – Col. 7 line 8). Although Grosser teaches remedial action may occur to correct a link that is not alive (Col. 5 lines 9-12), Grosser does not explicitly disclose establishing a link over a secondary communication network if the secure link is not alive. However, Hirst teaches that upon detecting a link is not alive, one can establish a link over a secondary communication network (Col. 2 line 54 – Col. 3 line 13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to take the system disclosed by Grosser and modify it as indicated by Hirst such that the system further comprises a module adapted to establish a link over a secondary communication network if the secure link is not alive. One would be motivated to have this since the reliability of a network connection is a critical concern (Col. 1 lines 20-35).

Conclusion

42. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

43. U.S. Patent 6,360,269 by Mamros et al. "Protected keepalive message through the internet" March 19, 2002. Same assignee of the instant application. Similar 'ping'

message over a secure link with the difference being the 'ping' of Mamros is not defined outside the security protocol used in he secure link.

44. U.S. Patent 6,182,226 by Reid et al. "System and method for controlling interactions between networks" January 30, 2001. Discloses ICMP ping over a secure link including IPSec protocol. See Col. 15 lines 59-67.

45. U.S. Patent 6,079,020 by Liu "Method and apparatus for managing a virtual private network" June 20, 2000. Discloses the use of a ping message between VPN gateways as well as pinging behind a gateway to a node on the network. See Col. 9 line 59 – Col. 10 line 4 and Fig. 7.

46. U.S. Patent 6,073,172 by Frailong et al. "Initializing and reconfiguring a secure network interface" June 6, 2000. Discloses a system monitor that periodically pings a VPN gateway. See Col. 11 lines 60-65.

47. U.S. Patent 5,864,666 by Shrader et al. "Web-based administration of IP tunneling on internet firewalls" January 26,1999. Discloses management of tunnels and associated VPN with the ability of pinging any IP address associated with the tunnel. See Col. 6 lines 48-63.

48. U.S. Patent 5,828,833 by Belville et al. "Method and system for allowing remote procedure calls through a network firewall" October 27, 1998. Discloses a firewall filter and system that pings associated applications servers. Any servers that do not respond are disabled from receiving any further messages. See Col. 6 lines 35-55.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Lazaro whose telephone number is 703-305-4868. The examiner can normally be reached on 8:30-5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain Alam can be reached on 703-308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lazaro
March 1, 2004

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER

Claim Tree
09/714082